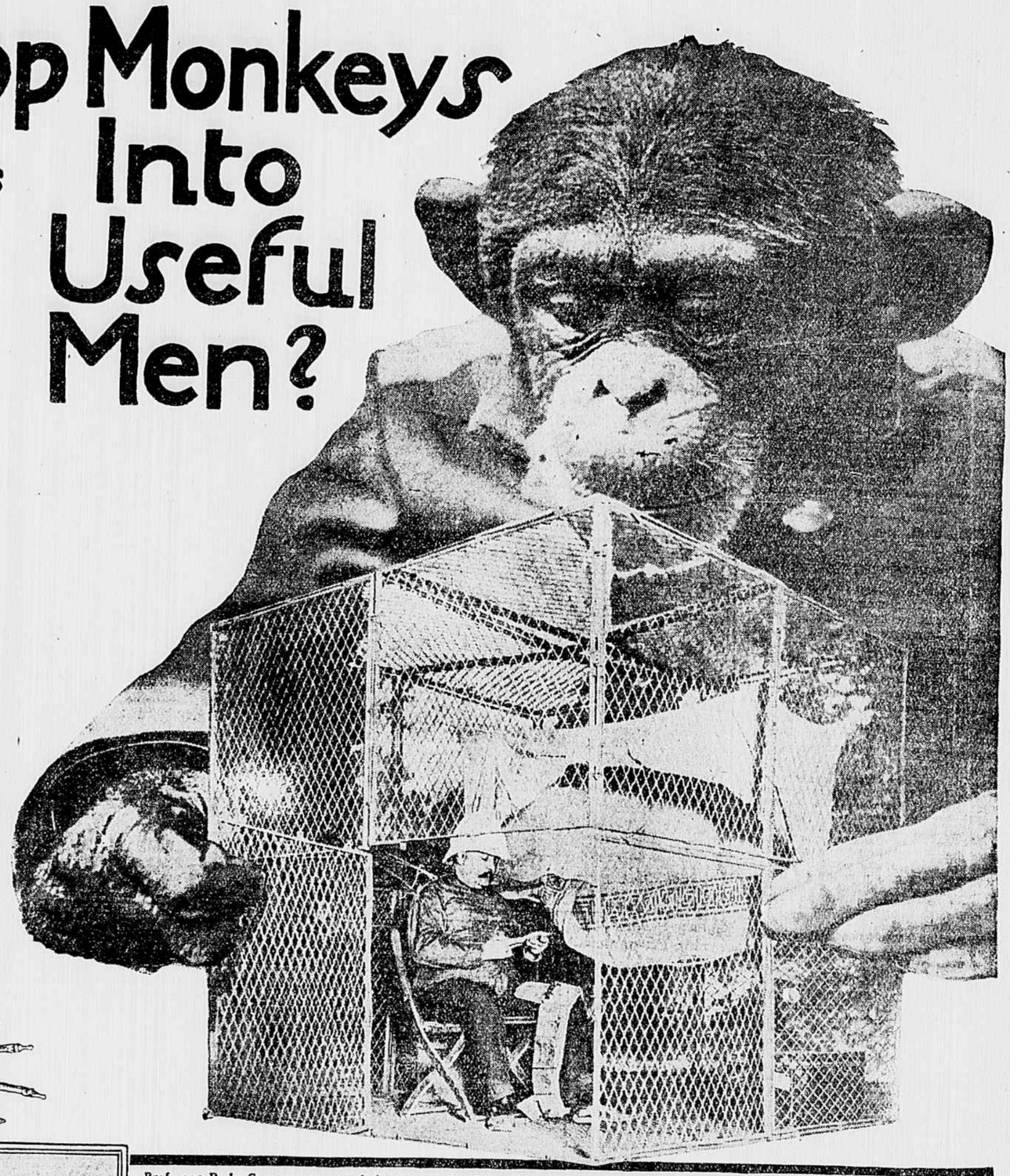
Ca... Science Develop Monkeys Into Useful Men?

World-...ide Experiments and Studies of Ap... With the Hope of Breeding ...ervants for Mankind Who Sh... l Perform Our Drudgery ...nd Distasteful Tasks



Professor R. L. Garner was one of the pioneers in the study of apes. He took a strong steel cage into the heart of the African jungle and spent many years observing monkeys of all sizes in their native haunts. So great was the curiosity of the apes that they came from great distances in the forest to visit Professor Garner and closely watch him, standing outside the bars of the scientist's safety cage. He asserts that the apes have a language, and that he has learned much of it.

SCIENCE has sudde... neglected the mo... the apes. Simult... vard, and Professor Go... appeals for a world-wi... anthropoid apes.

Already the French... the coast of Africa fo... Professor Yerkes repor... has been following with... Rothmann, of Germany,... fessor Yerkes now decl... large apery in some cor... where man's ancestors ...

Aside from the g... habits, mentality, psyc... is another possibility o... laborer.

The human race, ... civilization, has develo... sary tasks of daily life ...

...kened to the fact that it has ...tart of all fields of research—...rom Professor Yerkes, of Har...lt, of Paris, have come earnest ... of the cousins of mankind, the ...

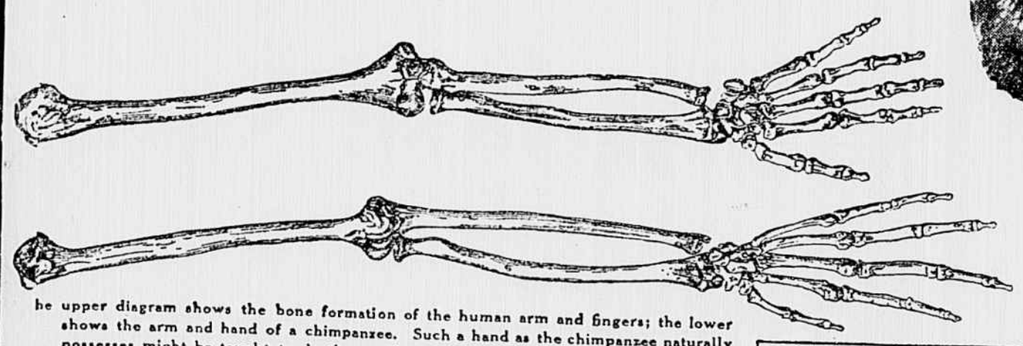
...ment has set aside an island off ...ian farm and laboratory, and ... remarkable research work he ...s in California. Professor Max ...n work along these lines. Pro..., the time has come to found a ...limate like Southern California, ...studied on a large scale. ...e of a thorough study of the ...and diseases of monkeys there ...dous importance—the ape as a ...

...e guidance of Christianity and ...point where many of the neces...rrent. It is increasingly difficult to find men to work in the mines, to shovel coal into the furnaces of steamships in the tropical heat of the engine rooms, to perform the drudgery of farm labor or to do the pick-and-shovel work of railroad or highway building.

A chimpanzee at the age of ten years has the weight and height of the average woman of twenty-five. But he has a muscle development far beyond the average college athlete or farm laborer. Can the ape be taught to do the work of the laborer and thus free mankind from this uninspiring drudgery?

The horse has pulled man's load along the roads for centuries, content with three meals a day and some straw to sleep on. Can the ape be taught to hoe the corn, weed the garden, dig in the mines, feed the furnace fires of the steamships and sweep our streets? If so, the disputes of capital and labor will be solved in some measure.

But if the monkey is developed and educated to this degree—do moral, ethical and religious questions at once arise? Would such an educated ape have an immortal soul? Would such employment, without wages and independence, be slavery? Would such an ape-man be entitled to religious instruction and the protection of the churches—and perhaps eventually the ballot?



he upper diagram shows the bone formation of the human arm and fingers; the lower shows the arm and hand of a chimpanzee. Such a hand as the chimpanzee naturally possesses might be taught to do the usual manual work of the laborer or unskilled artisan.

THE HUMAN FOOT AND THE ORANG-UTAN FOOT.

These pictures show very plainly that the ape has at the present moment a very considerable advantage over the human in the manual possibilities of his foot. The human foot has long since lost its ability to grasp objects or do the work of the human hand. The ape's foot, with its well-developed thumb, is able to do nearly the same work as a hand.

...spends much of his ti... fitted with all kinds of d... labyrinths, etc., where ... cord with infinite detail ... much intelligence his a... jects show, how they ... lems, how soon they lea... and why they do them.

Now, Professor Ye... greatly impressed by th... an ape colony to mankin... visit to the one establis... Max Rothmann, of Berlin... va, in the Canary Islands. ... Professor Yerkes forme... ape colony in a corner ... eral animal experimen... maintained by Dr. G. V. ... at Montecito, California. ... Yerkes was satisfied by ... rience that Southern ... would be the best region ... colony.

...ler monkeys, too, are, it is w... are apt to die from pulmona... The tendency to succumb ...ted by careful breeding, as i... Southern California offers ...y perfect health and where ...r, as they would in the tro... ...es his proposal:

...e located in a region whose ...o the life of a variety of lowe... ...tly desirable to avoid, in the ..., an enervating tropical cli... ...m civilization and from ... it is probably impossible ... ideal for both subjects and ob... ...essary to sacrifice in a me... ...r the past three or four yea... bearing on the several pro... an anthropoid station, and ... such an institute in widely ...he regions considered are ...la, Florida, the Panama Ca... Islands. Of all these, sout... most promising, and although ... or all of the anthropoid ap... seems eminently desirable t... locating an institute in any ... favorable part of the world. ...er consideration should be p... vestigation it would be nece... uals be intimately known ...wer primates, a generation ...rs; with the higher, not more ...s. It is, therefore, probable ... such an institute would c... ...d would not reach its maxi... ...d years."

...s plan in its relations wit... ...lems is dwelt upon very st... most desirable, he believes, studies of organisms lower than man, and especially those similar to man, should be made to contribute to the solution of our own medical, social and psychological problems. Prof. Yerkes points how the apes may improve man's conditions of life:

"During our own generation it has been amply demonstrated that knowledge based upon observation of other organisms may be of extreme value to man, and there is every reason to suppose that the solution of many of the most interesting and pressing problems of experimental medicine, of human genetics, physiology, psychology, sociology and economics may be solved, at least in large measure, most directly and economically through the use of the monkeys and anthropoid apes.

"Were I required to designate the chiefly significant points of contact between studies of the lower primates and practical endeavor toward human betterment, I should name the medical, the sociological and the psychological. For I am wholly convinced by my own experience, as well as by that of others, that the various medical sciences and medical practice have vastly more to gain than has yet been achieved, or than any considerable number of medical experts imagine, from the persistent and ingenious use of the monkeys and anthropoid apes in experimental inquiry.

"Likewise, I am convinced that education and all other forms of social service will profit immeasurably from experimental studies of the fundamental instincts of the other primates and from thorough investigation of the forms of habit-formation and of the characteristics of social relations. And last, but not least important, it is safe to assume that our genetic psychology, as well as other historical or genetic forms of biological description, may be developed more rapidly and satisfactorily by the thorough study of the monkeys, apes and other primates than by any other means.

"It does not seem extravagant to claim that the securing of adequate provision for the systematic and long-continued study of the primates is by far the most important task for our generation of biologists, and the one which we shall, therefore, be most shamed by neglecting. But it is also a task which, as history clearly indicates, will not be accomplished unless we devote ourselves confidently and determinedly to it with faith, vision and enthusiasm. For my own part, I am so entirely convinced of the scientific importance and human value of this kind of research that I am willing to devote my life wholly to it.

"If we are to progress beyond the present narrow limits of our knowledge of the lower primates, and make them contribute importantly to human welfare it must be through adequate provision for their systematic study."

In considering whether apes can become useful men, it is important to know whether they can understand human speech. Professor Richard L. Garner, as already mentioned, asserted many years ago that he had learned the rudiments of ape speech in the African jungle. In his latest report on this subject Professor Garner says:

"I not only have mastered the language of monkeys better than ever before, but this time I have actually succeeded in teaching certain monkeys certain English words which they use in connection with certain objects placed before them. Now, if an object like a red ball is held up before one of my best specimens, the monkey will identify it with the words 'red ball' uttered as a single, solitary word. I do not mean by this that any monkey can carry on an extended conversation, for that requires more brain that is to be found in any chimpanzee, but I do claim that some of my monkeys can recite connected sentences in English.

"However, if I have only taught them to identify certain objects and name them, I have proven that chimpanzees can be taught the English language, and the rest remains to be demonstrated when I return to the United States. I shall bring back at least six specimens which have mastered certain words, and though the animals are unreliable and are creatures of whims, one of them for instance, only saying 'Boon' one day and being able to recite a page from the dictionary the next, I am sure I can prove that I have taught them to speak English."

Professor Garner further explains that when he went into the jungle he was actuated primarily by the desire to study the monkey language at close range. While there he conceived the idea that it might be possible to take a baby chimpanzee and train it from infancy just as one would teach a backward child, by the kindergarten method. He has wooden blocks such as a child plays with, in colors. He taught the monkeys to build pyramids with these colored blocks, to call them 'wood," and "block," and "red" and "white," though they had difficulty with the last word, which they called "hite." Finally, after he had repeatedly named the colors, he attained such progress with his jungle school that when he called "red," a chimpanzee would pick up the red block. In this way he gradually taught them certain short syllable words, to distinguish the difference between colors, and to try to imitate the sounds he so carefully made.

These statements excited some incredulity among scientists, but it is noteworthy that Professor W. T. Shepherd, of Waynesburg College, distinctly states that the chimpanzee Peter could articulate the word "mamma." This statement is made by Professor Shepherd in the course of a report on the apes Peter and Consul, published in the Journal of Animal Behavior, the great American organ of research along this line.

Apes May Even Learn Human Speech and Writing

All Professor Shepherd's conclusions point to the possibility of making the apes do useful work. He describes how he examined the chimpanzee Peter, who, dressed like a man, sat down to a table, put on a napkin and ate food with a knife and fork. After eating, he struck a match, lighted a candle, lighted a cigarette and smoked. He gave his keeper, McArdle, a light for the latter's cigarette from his own.

Upon command from the keeper, the ape danced on the stage fairly well, much like a man, a sort of jig-dance.

When roller-skates were put on his feet he skated around the stage skilfully. He appeared to skate as well as a girl whom he chased around the stage.

The animal got upon a bicycle himself and rode it around the stage. He chased the girl around the stage while riding the wheel. While riding he drank water from a cup handed him. Then he skilfully rode between a number of bottles and cut a sort of figure 8 while riding between the bottles. The ape picked up a bottle and drank out of it while riding.

The animal rode the bicycle up an inclined plane on the stage. The professor noticed that he always increased his speed just before coming to the inclined plane.

After performing these feats Peter undressed and went to bed, very much like a man does.

Upon command from the keeper, Peter took up a hammer and a nail and drove the nail into the wall quickly and without observable awkwardness.

As a test of imitation, the professor took out his watch and pressed on the stem slowly, and opened the watch three times, while Peter watched his actions with attention and apparently with interest. Then the professor reached it to him; he held it and pressed on the stem correctly several times, as if to open it. However, he did not press hard enough, and the watch did not open. He thereupon attempted to open it with his finger nails. The keeper stated that the ape had not received any training in that act.

"I held out a writing tablet and a pencil to Peter," says Professor Shepherd. "He at once seized them and began scribbling, i. e., making irregular marks on the tablet. I made, in his sight, the letter T; a very plain T, with simply one vertical and one horizontal stroke of the pencil. The ape made a rather poor T the first time shown. He also made a W when I showed him once. Peter seemed to like to use the pencil and tablet."

Upon being ordered by his keeper, the animal put a handkerchief around Professor Shepherd's neck and tied it quickly and correctly when told to do so. He also, untied the knot quickly.

This professor deduces that the ability of the ape to do all kinds of clever tricks is attributable to his possession of hands and a motor equipment similar to that of man. Here there is an admission that the ape might be turned into a rough kind of a laborer.

In connection with the possibility of using apes in this way, we must remember their enormous strength. A full-sized gorilla has the strength of a dozen men. He can uproot a tree or bend a steel rifle barrel over his knee. If a creature of such muscular power could be taught to work he could mine as much coal as five or six men.

The chimpanzee and the orang-utan are smaller than the gorilla, but even more man-like than the latter. They are, however, far more muscular and powerful than men. A chimpanzee under observation stood 5 feet 2 inches when he was ten years old, and could life a heavier weight than the average trained athlete twenty years of age. If these animals could be bred to do a laborer's work, it would take only five years to produce coal-handlers, street-cleaners and pick-and-shovel laborers, who, like horses and oxen, would work for their board and lodging.

The ape's hands are very human in form and have the power of grasping handles, sticks, stones and other objects. It is true that the ape's hand has not the same exquisite power of adapting itself to the object seized as the human hand, but for many kinds of rough work it is perfectly suitable. Moreover, the ape's foot is more like a human hand than its hand, and, therefore, it is possible that by training it might be able to do the work of a four-handed laborer.

To sum up, it has been demonstrated by science that the ape has intelligence, reasoning power of a low order, the ability to understand simple words, serviceable hands and motor equipment for many kinds of work and great strength. Therefore there is serious ground for believing that it could be trained and made to do many kinds of rough labor against which the higher type of man revolts.

Next Sunday Will Be Given the Details of Many Recent Surprising Experiments With Apes, Which Give Encouragement to the Hope That Science May Succeed in Breeding Ape-Men. And Rev. Dr. Young Discusses the Religious Aspects of Such a Development.